Mod Design 471 19-2

INSTRUCTION MANUAL

TRANSIFIER

KAY ELECTRIC CO.
PINE BROOK, N. J.

May 27, 1957

INSTRUCTION SHEETS

for the

TRANSIFIER

KAY ELECTRIC COMPANY

PINE BROOK, N. J.

CA 6-4000

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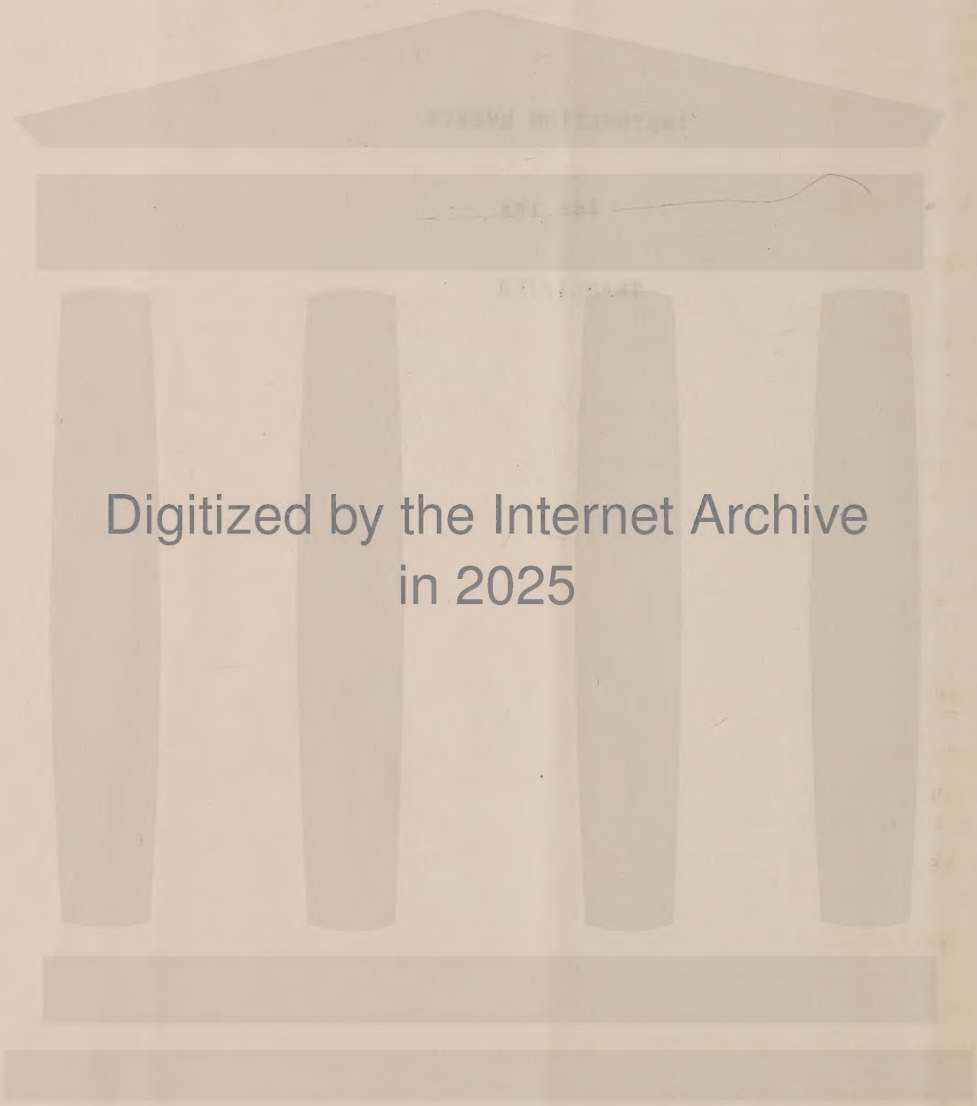

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TRANSIFIER

A. PURPOSE AND GENERAL DESCRIPTION.

The Kay **TRANSIFIER** is an all transistor wide-band video amplifier capable of providing **10 DB** or **20 DB** gain in low level circuits from the audio thru high frequency ranges. One pair of **INPUT** and **OUTPUT** terminals and one knob control provide maximum ease of operation with a minimum of maintenance and difficulty.

The all-transistor circuitry includes a feedback amplifier for stable operation, which is compensated for uniformity of high frequency gain. The output stage reduces the output impedance to approximately 70 ohms so that the **TRANSIFIER** may be fed directly into the large input capacitance of a wide band oscilloscope without appreciable loading. Mercury batteries provide constant voltage output throughout their life for low noise, no hum, long life operation with a minimum of size and weight, providing maximum portability.

B. TYPICAL APPLICATIONS.

The **TRANSIFIER** is -

1. Used to replace bulky, noisy, narrow band decade amplifiers. Two **TRANSIFIERS** operated in series will provide gains of 10 times and 100 times, as well as 3 times and 30 times.

2. Used as line amplifiers in Television aural and visual transmissions.

3. Used as pre-amplifiers for wide band oscilloscopes, hi fidelity audio and ultrasonic amplifiers.

4. Used in the laboratory for amplification of weak heterodyned signals.

5. Used to amplify audio hum or noise to aid in tracing the source of that trouble in electronic circuitry.

C. SPECIFICATIONS.

1. **FREQUENCY RESPONSE AND GAIN.**

   a. **10 DB** position - no more than 3 db down at 15 cycles and 15 Mc. No more than 11 db gain in between.

   b. **20 DB** position - no more than 3 db down at 20 cycles and 10 Mc. No more than 21 db gain in between.

2. **INPUT IMPEDANCE.**

   a. Resistive component **10 DB** position at least 20,000 ohms at 1 Mc to 15,000 at 10 Mc.

   b. Capacitive component - **10 DB** position - 15 micromicrofarads.

3. **OUTPUT IMPEDANCE** - Approximately 75 ohms.

4. **INHERENT NOISE** - no greater than 10 microvolts referred to shorted input in **20 DB** gain position.

5. **MAXIMUM OUTPUT VOLTAGE** - 0.2V rms, **10 DB** gain position; 0.3V rms, **20 DB** gain position.

6. **BATTERY LIFE** - Approximately 1000 hours with mercury cells, 8 hour days.

7. TERMINALS - standard three-quarter inch banana plug and jack spacing.

D. OPERATION.

1. When used with equipment run from an alternating-current source with one line grounded, be sure that the ground terminals of the equipment are connected to the case GROUND terminals of the **TRANSIFIER**.

2. A suitable blocking capacitor must be used if the OUTPUT terminals of the **TRANSIFIER** are to be put across a circuit with a d-c voltage present at its input.

3. An a-c voltage greater than four volts should never be placed across the OUTPUT terminals of the **TRANSIFIER**.

4. The gain selector switch of the **TRANSIFIER** should be placed in the OFF position whenever the unit is not in use, or when the INPUT or OUTPUT connections are changed.

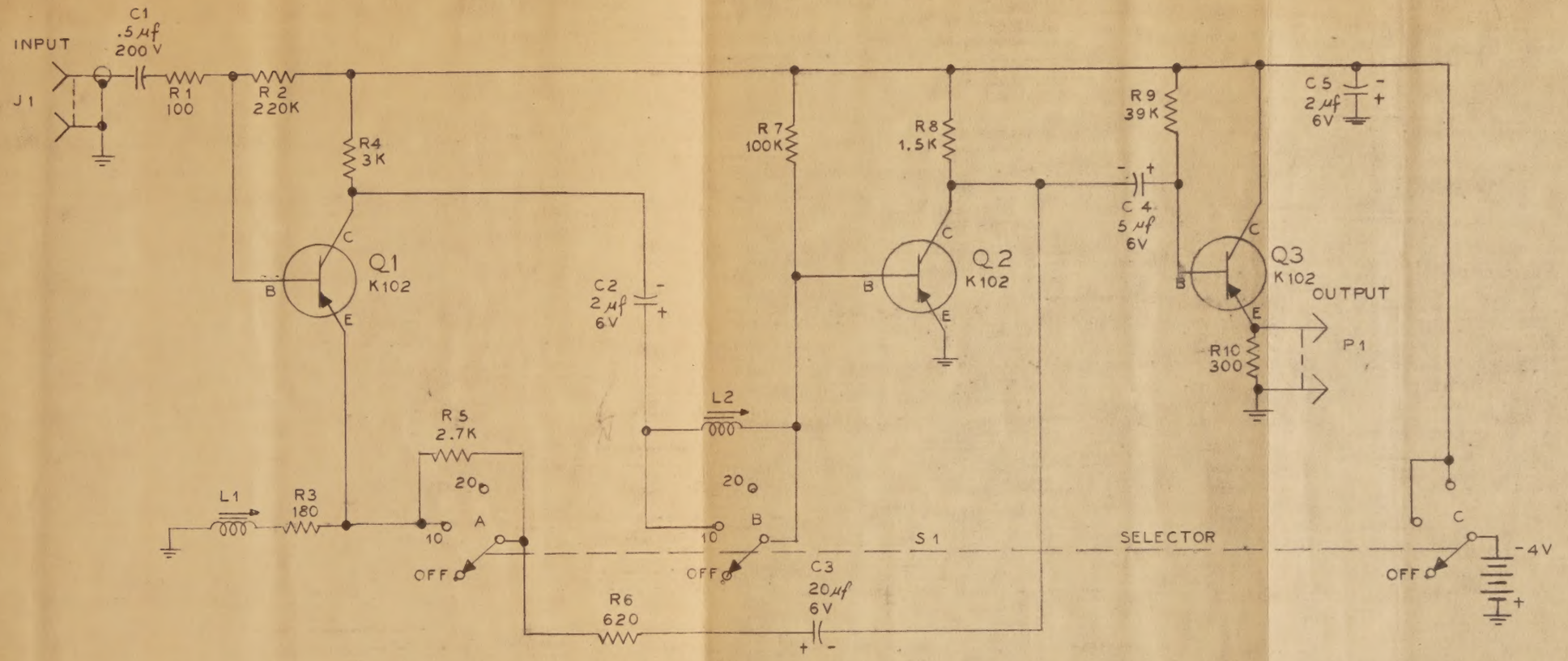
5. When two or more **TRANSIFIERS** are cascaded for additional gain, the units with the least noise should be placed at the beginning of the chain for minimum overall noise output. The maximum signal output will be limited by the final **TRANSIFIER**'s capability.

E. MAINTENANCE AND REPAIR.

1. If the **TRANSIFIER** is used in the range of its specifications and with the precautions observed above, the only maintenance required should be replacement of batteries. When the overall gain of the **TRANSIFIER** drops 1 db or when the battery voltage drops below 3.9 volts under load, the three batteries should be replaced by Mallory RM-502-R batteries or equivalent. If penlight cells are used, a 180 ohm 1/10 or 1/2 watt resistor should be inserted in series with the negative (black) lead to keep the voltage to the unit at about 4.02V. As the penlight cells age, the resistor will have to be decreased to maintain a constant voltage. The battery holder may have to be bent to insure good electrical contact.

2. If desired, an external d-c supply of 4.02V may be connected to the battery leads in place of the RM-502-R batteries to allow longer unattended operation. Observe polarity.

3. The four screws under the corners of the felt backing on the bottom of the **TRANSIFIER** hold on the battery plate. Their removal allows the batteries to be serviced.



NOTE
UNLESS INDICATED OTHERWISE
RESISTANCES IN OHMS

SCHEMATIC DIAGRAM TRANSIFIER MODEL 1020A

DB AWPIERCE

KAY ELECTRIC CO. PINE BROOK. N. J.

SCHEMATIC	TRANSIFIER MODEL 1020A	
MAT.	FINISH:	SCALE:

DIMENSIONS TOLERANCES UNLESS OTHERWISE SPECIFIED:
DECIMAL DIMENSIONS ± .002 FRACTIONAL DIMENSIONS ± .005

CHANGE	DATE	APP.
"B" Redesigned & Redrawn	6-3-57	

KAY ELECTRIC CO.
PINE BROOK, N. J.

DWN. BY AWPIERCE	DATE 6-3-57
APP. BY C.J FRANKS	DATE 6-3-57

DWG. NO. KB 5178 B

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